

**REMARKS**

Claims 1-20 remain pending after this response.

***Claim Amendments***

By this amendment, claim 1 is amended to incorporate the limitations of claim 21. Claim 21 is cancelled. No new matter is added by this amendment.

***Request for Interview with Examiner***

In view of the above claim amendments, and the fact that several issues remain to be resolved, applicants request that the Examiner permit applicants' representative the courtesy of an interview prior to examination of the above application on the merits. Thus, in the event that applicants' representative has not previously arranged the requested interview prior to that time, the Examiner is requested to contact the undersigned to schedule the interview. The Examiner's cooperation in this matter is appreciated.

***Rejection under 35 USC 112 (paragraph two)***

Claim 21 stands rejected under 35 USC 112 (paragraph two) as not distinctly claiming the invention. This rejection is respectfully traversed.

Applicants initially note that claim 21 is cancelled. Hence, the rejection is moot. However, to the extent that the Examiner's rejection now applies to claim 1 (which now incorporates the limitations of claim 21), applicants present the following comments.

The Examiner objects to the claims for the reason that formulas (1) and (5) are recited in claims 1 and 21 (with formulas (2)-(4) being absent). Applicants submit that this is not a proper basis for a

rejection under 35 USC 112 (paragraph two). One of ordinary skill in the art, upon reading claims 1 and 21, would have no difficulty in understanding the intent of the claims. There is no requirement that formulas in claims be numbered consecutively, as long as they are number consistently. However, in an attempt to reduce the issues pending before the Examiner, the numbers (1) and (5) are deleted. This aspect of the rejection should accordingly be withdrawn.

The Examiner also rejects the claim for the reason that formula (5) of claim 21 does not appear to further limit formula (1) of claim 1. However, as confirmed by one of the Declarations under 37 CFR 1.132 previously presented, formula (5) defines a relationship that is encompassed by formula (1).

As described at page 6, line 12 to page 7, line 9 of the specification, formula (1) defines the relationship of the cumulative volume frequency (V) and the particle size to be satisfied by the particle size distribution of the present invention. In each of the formulas (2)-(5), a favorable relationship is *defined by gradation*. As shown in Figures 1 and 2 of the previously-submitted Declaration, formula (5) defines the most favorable aspect of the scope defined by formula (1).

Further, applicants note that formula (1) is directed to a particle size distribution for silica particles of a size of *from 40 to 100 nm*, while formula (5) is directed to a particle size distribution for silica particles of a size of *from 40 to 45 nm*. Clearly, the particle size distribution of formula (5) is a subset of that of formula (1). As claim 1 now recites both relationships, any polishing composition must meet both limitations.

In any event, as the limitations of claim 21 are incorporated into claim 1, this rejection is moot and should be withdrawn.

***Claim Rejections – 35 USC 103(a)***

The Examiner has set forth various individual rejections of claims 1-8 and 21 under the provisions of 35 USC 103(a) over each of the following individual references: **Koichi et al ‘175** (US 6,551,175), **Oshima ‘789** (US 2002/0194789), **Ota et al ‘711** (US 2003/0110711), and **Oshima et al ‘146** (US 2004/0127146).

Reconsideration and withdrawal of each of these separate rejections is respectfully requested based on the following discussion.

Applicants initially note that, to the extent that claim 21 was separately rejected in the Final Rejection, such rejection is now *moot* in view of the cancellation of claim 21.

**Legal Standard for Determining Obviousness**

To establish a *prima facie* case of obviousness, three basic criteria must be met. First, there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference (or references when combined) must teach or suggest all the claim limitations.

The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure. *In re Vaeck*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991). Applicants submit that the Examiner has failed to present a *prima facie* case of obviousness.

*Distinctions Over the Cited Art*

***Oshima '789***

The cited Oshima '789 reference has a publication date of December 26, 2002, and is assigned to Kao Corporation, which is also the assignee of the present invention. Notably, the inventions recited in the instant claims and the cited Oshima '789 reference had the same assignee (Kao Corporation) *at the time the respective inventions were made*. The Oshima '789 reference is accordingly not citable against the instant claims as of its US filing date (April 24, 2002), due to the safe harbor provisions of 35 USC § 103(c). It is only citable as of its December 26, 2002 publication date.

The December 26, 2002 publication date of the Oshima '789 reference, is the same date as applicant's priority date under 35 USC §119 to JP 2002-377288.

Accordingly, based on the prior submission of the verified English translation of JP 2002-377288 (which provides full 35 USC 112, first paragraph support for the invention now being claimed), it is submitted that the cited Oshima '789 reference has been effectively antedated for all that it teaches and discloses.

***While the Examiner makes no mention of the withdrawal of this rejection in the Advisory Action, such withdrawal would appear proper and confirmation of same is requested.***

***Oshima '146***

The cited Oshima '146 reference has a publication date of July 1, 2004, and is assigned to Kao Corporation, which is also the assignee of the present invention. Notably, the inventions recited in the instant claims and the cited Oshima '146 reference *had the same assignee (Kao Corporation) at the time the respective inventions were made*., The Oshima '146 reference is accordingly not citable against the instant claims as of its US filing date (December 4, 2003), due to the safe harbor provisions of 35 USC § 103(c). Instead, it is only citable as of its July 1, 2004 publication date.

The July 1, 2004 publication date of the Oshima '146 reference, is clearly after the December 5, 2003 filing date of the instant application in the USPTO, so that the rejection over the cited Oshima '146 reference must be withdrawn.

*While the Examiner makes no mention of the withdrawal of this rejection in the Advisory Action, such withdrawal would appear proper and confirmation of same is requested.*

***Koichi et al '175***

In the instant invention, a cumulative volume frequency (V) of the abrasive is 60 or more when a particle size (R) is 40 nm (see Formula (1)).

In contrast, in the cited Koichi et al '175 reference, it is described that an especially favorable D10 value is 40-60 nm (Embodiment 1 at column 4, lines 18-25) and that a favorable percentage of particles having a particle size of 40 nm or less is 3% or less (Embodiment 2 at column 5, lines 27-33). Supporting these descriptions, in Examples I-1 to I-5 of the cited reference, an abrasive having particle size distribution of which D10 is 45 nm or more is used.

It can be reasonably presumed that the polishing compositions in the examples of the cited Koichi et al '175 reference would not satisfy the Formulas of claim 1 of the present invention. In the cited reference, the particle size distribution is defined on a number basis so that it cannot be directly compared with the particle size distribution in the present invention defined on a weight or volume basis. Applicants previously submitted a Declaration under 37 CFR 1.132 (discussed below) in support of this assertion.

As noted above, in the cited Koichi et al '175 reference, it is favorable that the ratio of particles having a particle size of 40 nm or less is low. This feature of the cited reference is opposite to the feature of the present invention requiring a specific amount or more of polishing particles having a

particle size of 40 nm or less. Accordingly, the present invention is neither taught nor suggested by the cited Koichi et al '175 reference.

***Ota et al '711***

As described in the previously submitted Declaration under 37 CFR 1.132 (discussed below), particle size distribution on a volume basis cannot be determined by (or correlated to) particle size distribution based on number-base in a particle group where the particle size for a portion of the particles is not known. The reference discloses a combination of monomodal abrasives such that there is an unknown portion in the particle distribution. Accordingly, the particle size distribution of the claimed invention cannot be directly compared with that of Ota et al where the particle size for a portion of the particles is unknown.

Further, the polishing compositions satisfying the particle size distribution defined in the Ota et al '711 reference are disclosed in the specification of the instant application as Comparative Examples 1 to 5. These comparative examples in the instant application correspond to the examples of the cited Ota et al '711 reference as indicated in the below table.

Examples of Ota et al. (US 2003/0110711)	$\alpha$ or $\beta$	$\gamma$	$\Delta$	$\epsilon, \eta, \text{ or } \theta$	$\Xi$
Comp. Example of the present invention	1	2	3	4	5

As shown in Table 2 of the present application (see page 23), Example 1 to 10 satisfying the definition of particle size distribution in the present invention show remarkable effects in reducing

surface roughness in comparison with Comparative Examples 1 to 5. That is, the present invention exhibits excellent effects which cannot be expected by the cited Ota et al '711 reference.

In addition, since the cited reference discloses combinations of monomodal abrasives, there is an open portion in the particle size distribution of the cited reference. Further, in the cited Ota et al '711 reference, the particle size distribution is defined on a number basis so that it cannot be directly compared with the particle size distribution in the present invention, which is defined on a weight or volume basis.

It is not obvious to find a specific particle size distribution necessary for exhibiting unexpected effects based on such an uncomparable particle size distribution as noted above. Accordingly, the particle size distribution of the present invention is not rendered obvious by the cited Ota et al '711 reference.

In support of applicants' position as to the failure of Ota et al to teach or suggest the claimed invention, applicants again direct the Examiner's attention to the previously-submitted Declaration under 37 CFR 1.132 having Figures 1 and 2 therein. As discussed and demonstrated by the Declaration, the Ota et al reference does not disclose a particle distribution which meets the limitations of applicants' claims.

Based on the above considerations, it is submitted that no motivation or teaching is found in the cited art of Koichi et al '175 or Ota et al '711 that would allow one of ordinary skill in the art arrive at the instant invention as asserted by the Examiner. Absent such motivation in the cited art the outstanding rejections cannot be sustained.

The application is accordingly believed to be directed to patentable subject matter, and an early indication of same earnestly is solicited.

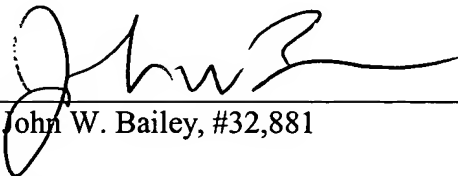
In view of the above, the application is believed to be in condition for allowance. An early indication of same earnestly is solicited.

Should the Examiner have any questions concerning the present reply, he is respectfully requested to contact the undersigned at the telephone number provided.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. §§ 1.16 or 1.17; particularly, extension of time fees.

Respectfully submitted,

BIRCH, STEWART, KOLASCH & BIRCH, LLP

By   
John W. Bailey, #32,881

  
JWB/JWH/sh

P.O. Box 747  
Falls Church, VA 22040-0747  
(703) 205-8000